MOGENSEN MITIGATION, INC

August 28, 2013

ATTN: Katie Merritt
Wetlands, Buffers, Stormwater - Compliance & Permitting Unit
NCDENR - Division of Water Resources
1650 Mail Service Center, Raleigh, NC 27699-1650

Dear Mrs. Merritt,

On behalf of Mogensen Mitigation, Inc. (MMI), I am pleased to present this Bank Parcel Development Package for the Tar River Headwaters Riparian Buffer and Nutrient Offset Mitigation Bank. Previously MMI submitted a draft BPDP for your review and comments. We appreciate your comments and have taken the time to address all specific issues and associated comments (both verbal and written) in this Bank Parcel Development Package.

We appreciate your review of this Bank Parcel Development Package and look forward to its approval. If you require additional information, please contact me at (704) 576-1111 or rich@mogensenmitigation.com.

Sincerely,

Richard K. Mogensen
Mogensen Mitigation, Inc. President
P.O Box 690429
Charlotte, NC 28227
Phone: (704) 576-1111
Email: rich@mogensenmitigation.com

cc: Jeremy J. Poplawski, Mogensen Mitigation, Inc.

DWR Project # 2013-0184

TAR RIVER HEADWATERS RIPARIAN BUFFER AND NUTRIENT OFFSET MITIGATION BANK

Bank Parcel Development Package

Prepared by Mogensen Mitigation, Inc.
August, 2013

Table of Contents

Tables

Appendix A: Site Maps

1.0 Project Location and Description

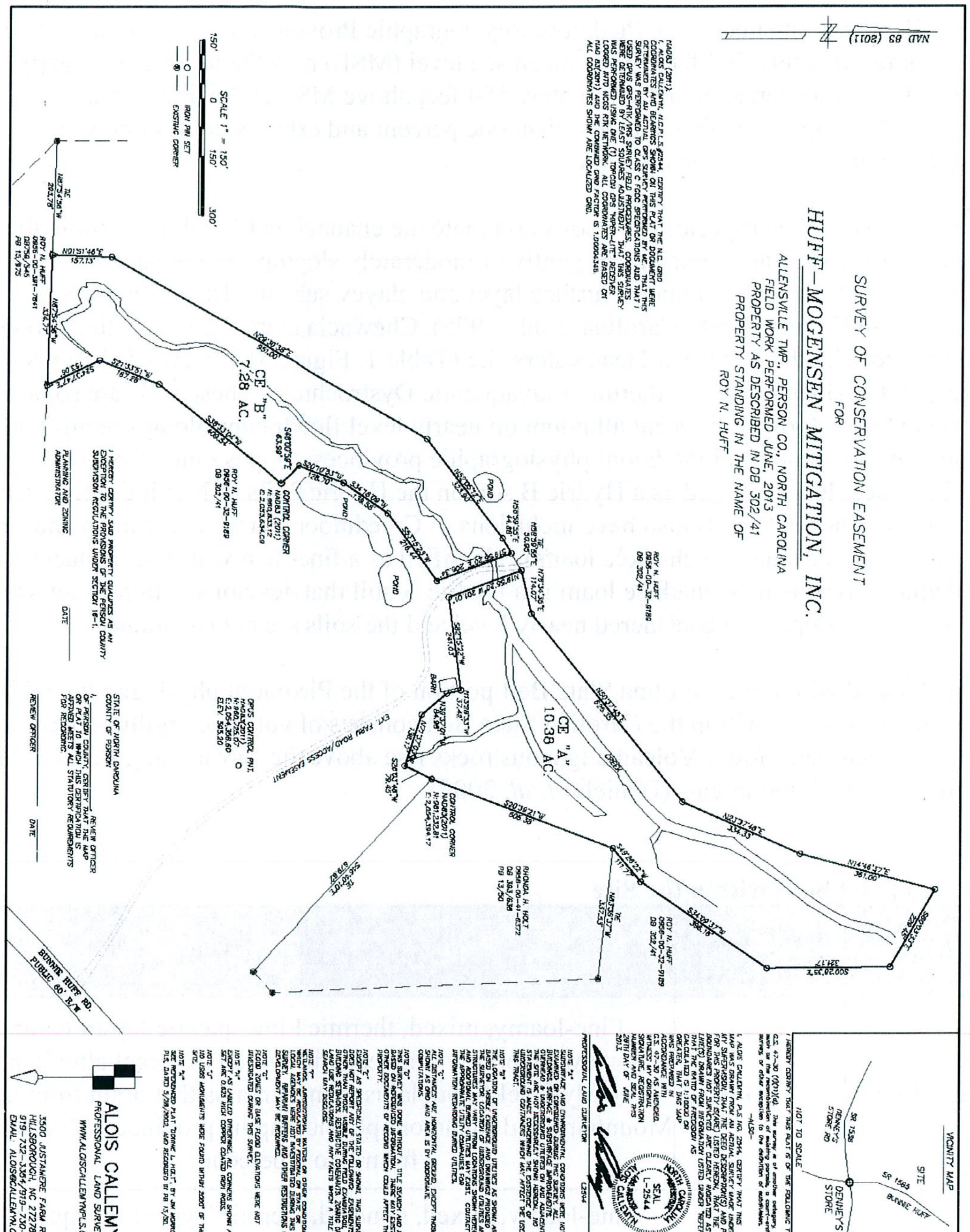
The Tar River Headwaters Riparian Buffer and Nutrient Offset Mitigation Bank (TRH MB) site is located in Person County, near Oxford, North Carolina, within the Piedmont Physiographic Province. It lies within the 8-digit HUC 03020101 of the Tar-Pamlico River Basin and lies within a 228-acre parcel owned by Roy and Joyce Huff (Figure 1). This is the Bank Parcel Development Package (BPDP) and Final Design Plan. TRH MB site encompasses nearly 3,800 linear feet of existing stream channel headwater tributaries to the Tar River and associated flood plain. The property is located at 333 Bunnie Huff Road, Oxford, NC 27565 (N 36.391302, W -78.817128). The tributaries are enclosed by a "brown polygon" on the attached US Geological Survey (USGS) Triple Springs 7.5 Minute Quadrangle Map (Figure 2), and are denoted as a "blue line" on the USGS Quad and the Soil Survey of Person County Map (Figure 3), (Sink, 1995). These unnamed tributaries carry water to the Tar-River where it has a BIMS classification of "WS-IV; NSW." The landowners have agreed to allow the restoration and to place the land under a conservation easement so that the site will be protected in perpetuity. Cattle and other livestock will be excluded from the TRH MB site by means of proper fencing. A detailed boundary survey has been prepared (Appendix A, Figure 6) delineating the area to be protected under the conservation easement. Prior to debiting the easement will be recorded in the Person County Clerk's office.

This site will be established under the terms and conditions of the Mogensen Mitigation, Inc. (MMI) Tar River Headwaters Riparian Buffer and Nutrient Offset Umbrella Mitigation Banking Instrument (UMBI) made and entered into by MMI, acting as the Bank Sponsor (Sponsor), and the North Carolina Department of Environment and Natural Resources - Division of Water Quality (DWQ). This document was signed on April, 09, 2013.

The Sponsor proposes to restore approximately 7.5 acres (327,988 square feet) of Tar-Pamlico riparian buffers to generate riparian buffer credits. In addition, approximately 9.26 acres of other riparian areas will be restored to generate nutrient offset credits. (Appendix A, Figure 6). The project area is currently used for livestock grazing and contains ditches and channels that convey nutrients, sediment, and other agricultural pollutants directly into tributaries. Riparian restoration in conjunction with cattle exclusion will reduce sediment, nutrient, and other pollutant inputs from the project area, thereby improving the overall water quality of this headwater tributary and ultimately, to the Tar River. Separate from this BPDP, but part of the MMI Mitigation Banking Instrument with the Interagency Review Team (IRT) for stream restoration, areas of riverine wetlands will also be restored and/or created for additional habitat diversity in areas of the old, abandoned channels.

The objective of the restoration plan is to restore the primary riparian functions and services associated with nutrient removal and transformation, sediment retention, flood-flow attenuation, and wildlife (both aquatic and terrestrial) habitat. While many of these benefits are limited to the project area, others, such as pollutant removal and improved terrestrial and aquatic habitat, have more far-reaching watershed benefits.

Figure 6: Boundary Survey



2.0 Project Area- Existing Conditions

2.1 Geologic & Soil Characteristics

The TRH MB Site is situated in the Piedmont Physiographic Province. Elevations at the site range from approximately 560 feet above mean sea level (MSL) near the upstream property boundary at the main channel to approximately 550 feet above MSL at the downstream boundary. Valley slope is estimated at less than one percent and extends downslope from northeast to southwest across the property.

Chewacla and Wehadkee (hydric) loam soils dominate the channel and floodplain within the project area. These soils are described as gently or moderately sloping, somewhat poorly to poorly drained soils that have a loamy surface layer and clayey subsoil. Based on the Soil Survey of Person County, North Carolina (Sink, 1995), Chewacla loam dominates the floodplain areas associated with the Tar River Headwaters site (Table 1, Figure 5). Chewacla loam is classified as a fine-loamy, mixed, thermic Fluvaquentic Dystrochrept. These soils are somewhat poorly drained soils formed in recent alluvium on nearly level floodplains along streams that drain from the Mountains and Piedmont physiographic provinces. Slopes range from 0 to 2 percent. Chewacla loam is noted as a Hydric B soil on the Hydric Soils of North Carolina list (NRCS, 1995). Chewacla soils also have inclusions of Creedmoor coarse sandy loam and small pockets of Wehadkee loam. Wehadkee loam is classified as a fine-loamy, mixed, nonacid, thermic Typic Fluvaquent. Wehadkee loam is a Hydric A soil that develops within lower swales of the floodplain. Slopes are considered nearly level and the soils are poorly drained.

The site is located within the Carolina Slate Belt portion of the Piedmont physiographic region of North Carolina. Bedrock within the Carolina Slate Belt consists of volcanic argillites, basic and acid tuffs, breccias, and flows. Volcanic igneous rocks rise above the surrounding slates as high rolling hills and small mountains (Daniels *et. al*, 2005).

Table 1. Mapped Soils within the Site

Soil Type	Hydrologic Soil Group	General Description
Chewacla Loam	HSG B	Fine-loamy, mixed, thermic Fluvaquentic Dystrochrept. Somewhat poorly drained soil formed in recent alluvium on nearly level floodplains along streams that drain from the Mountains and Piedmont physiographic provinces. Slopes range from 0 to 2 percent.
Wehadkee Loam	HSG B	Fine-loamy, mixed, nonacid, thermic Typic Fluvaquent. A hydric soil that develops within lower swales of the floodplain. Slopes are considered nearly level and the soils are poorly drained.

2.2 *Vegetative Communities*

The vegetation at the site is separated into two major groupings. These groupings are based primarily on topographical position and current land use. The first grouping is located within the lower section of the site downstream of the stream crossing immediately adjacent to the stream banks. A thin (often only one stem) riparian area is dominated by young to mature green ash (*Fraxinus pennsylvanica*), box elder (*Acer negundo*), ironwood (*Carpinus caroliniana*), willow oak (*Quercus phellos*), white oak (*Quercus alba*), sweetgum (*Liquidambar styraciflua*), tulip poplar (*Liriodendron tulipifera*), elderberry (*Sambucus canadensis*), Chinese privet (*Ligustrum sinense*), greenbrier (*Smilax sp.*), and sawtooth blackberry (*Rhubus argutus*). This vegetation is partially managed and during an onsite visit with staff from the DWR, it was determined to be appropriate for riparian restoration. The second grouping is located throughout the project area. This second vegetation grouping is located on land actively used as pasture for cattle and horses. The upper portion of the reach and a small tributary are barren of woody vegetation within their riparian areas and consist primarily of fescue (*Festuca sp.*) and other grasses and weeds. Sparse stands of red cedar (*Juniperus virginiana*) and black willow (*Salix nigra*) are located immediately upstream of the stream crossing.

2.3 *Threatened and Endangered Species*

According to the US Fish and Wildlife Service (USFWS), there is only one federally endangered species, (*Alasmidonta heterodon*) and nine federal species of concern potentially occurring in Person County, (USFWS, 2013). In addition, The North Carolina Natural Heritage Program (NCNHP) identifies another 18 species protected by the State of North Carolina. A review of the NCNHP database of documented occurrences (NCNHP, 2012) revealed one occurrence of State Rare plants within one mile of the project site and one occurrence of a natural community. An occurrence of Glade wild quinine (*Parthenium auriculatum*) is present approximately 0.6 mile northwest of the site. A 'Basic Oak-Hickory Forest' exists immediately adjacent to the north of the site. Habitat for threatened and endangered species does not currently exist on the project site. The proposed project is not likely to impact any protected species. Investigations will be conducted for each of these species and their appropriate habitat requirements as part of the TRH Stream Mitigation Plan with the IRT. A Section 7 (ESA) clearance will be obtained from the USFWS prior to restoration activities.

A review of available databases was conducted to determine the proximity of Significant Natural Heritage areas to the project site. One Natural Heritage occurrence is located immediately upstream of the project site in the Tar River. The Tar River downstream of the project site is listed as a proposed critical habitat area and a significant aquatic habitat (Figure 2). Clearance for restoration activities has been provided by the NCNHP. Restoration of the site will provide additional habitat as well as reducing sediment and nutrient loads to the sensitive waters of the Tar River.

2.4 *Cultural Resources*

No historic buildings or foundations were seen during initial field investigations. As such, there are no anticipated impacts to cultural resources as a result of the proposed restoration actions. A

review of properties to be determined eligible for the National Register of Historic Places at the State Historic Preservation Office (SHPO) was conducted for the study area and surrounding areas. According to the files, there are no National Register properties within a one-mile radius of the study area. In addition, the SHPO Archaeological Section was contacted in order to determine if documented archaeological sites occur at or near the study area. No sites were identified within a one-mile radius of the study area. However, if cultural resources are found to exist, MMI will immediately report them to the SHPO and wait for clearance prior to implementing the restoration plan in this BPDP.

2.5 Environmental Issues

Preliminary data was obtained from Environmental Data Resources, Inc. (EDR) for the determination of potential on-site or nearby sources of contamination. According to the EDR databases, the TRH MB site is not listed in any search records. Additionally, there are no federal or state records within the required search distances of the TRH MB.

2.6 FEMA Floodplain / Floodway Mapping

These streams are located within a region that is not mapped by FEMA, therefore no data exists. Therefore, CLOMAR and/or No Rise certification will not be required.

3.0 Proposed Riparian Buffer Restoration

The Sponsor proposes to restore approximately 7.5 acres of Tar-Pamlico riparian buffer along UT#1 and UT#2. The widths of the Tar-Pamlico riparian buffers are measured from the edge of the Normal High Water Level (NHWL) and extend landward a distance of 50 feet per 15A NCAC 02B .0259. These widths vary depending on resultant stream locations, but do not exceed 50 feet. Restoration would entail planting Tar-Pamlico riparian buffers with native tree species found either within a reference Tar-Pamlico riparian buffer or within the Piedmont Mesic Mixed Forest *The Natural Communities of North Carolina; Third Approximation* (Shafale and Wheatley, 1990). The goal would be to "jumpstart" the development of a native bottomland, hardwood climactic forest. Proposed Tar-Pamlico riparian buffer restoration would be expected to enhance the geomorphic, hydrologic, and biologic functioning of the tributaries by restoring more natural hydrologic and sediment transport regimes, reducing temperatures, increasing dissolved oxygen levels, stabilizing soils, and improving wildlife habitat.

The Tar-Pamlico riparian buffer restoration area will be a Piedmont Alluvial Forest as described in Schafale and Weakley (1990). Although this type of palustrine floodplain system is typically small in size it is vulnerable to indirect damage by actions on adjacent lands. Table 2 lists proposed Piedmont Alluvial Forest trees and shrubs to be planted at the site. The Piedmont Alluvial Forest community typically has high species diversity in the tree and shrub layers because of the heterogeneous nature of small floodplains. Hardwood trees will be planted to mimic the natural communities. Trees will be planted across the site, and grasses, sedges, and herbaceous plants will be concentrated around higher topographic areas. Additionally, non-native invasive vegetation will be removed as needed. Table 2 lists species that will be used for

planting and Appendix C contains detailed planting notes and graphics. Please make note that this Bank will be constructed in conjunction with an associated Stream Mitigation Bank that is currently proposed.

Table 2. Plant List

Common Name	Scientific Name	Wetland Indicator
Trees		
American Elm	*Ulmus americana*	FACW
American Holly	*Ilex opaca*	FACU
American Hornbeam (ironwood)	*Carpinus caroliniana*	FAC
American Sycamore	*Platanus occidentalis*	FACW
Black Tupelo	*Nyssa sylvatica*	FAC
Black Willow	*Salix Nigra*	OBL
Green Ash	*Fraxinus pennsylvanica*	FACW
Northern Red Oak	*Quercus rubra*	FACU
Northern White Oak	*Quercus alba*	FACU
Overcup Oak	*Quercus lyrata*	OBL
Pin Oak	*Quercus palustris*	FACW
River Birch	*Betula nigra*	FACW
Shagbark Hickory	*Carya ovata*	FACU
Southern Bald Cyprus	*Taxodium distichum*	OBL
Southern Red Oak	*Quercus falcata*	FACU
Swamp White Oak	*Quercus bicolor*	FACW
Sweet-Bay Magnolia	*Magnolia virginiana*	FACW
Tulip Poplar	*Liriodendron tulipifera*	FAC
Water Oak	*Quercus nigra*	FAC
Willow Oak	*Quercus phellos*	FAC

The conservation easement boundary will be marked by aluminum poles and metal conservation easement signs. Additionally, the entire conservation easement will be protected from livestock using approved fencing. Additional protection of the project area will not be a concern as the proposed conservation easement lies in the middle of the Huff Farm with extremely limited access from surrounding neighbors. The property parcel, where the project site is located, is bounded by a road, agriculture fields, and the forested riparian corridor of the Tar River Headwaters project site and a forested Natural Heritage Area.

4.0 Nutrient Offset Restoration

The sponsor proposes to restore approximately 9.25 acres of riparian areas. Riparian areas to be restored for nutrient offset will be available from 50' beyond the NHWL to 200' to the easement boundary. The first 50' surrounding the stream will generate riparian buffer restoration credits while the remaining 150' will generate nutrient offset credits.

5.0 Success Criteria

The Sponsor shall be responsible for assuring the ecological success of the Bank. The success of the Bank will be measured by performance standards approved by NCDENR-DWQ permits and the UMBI. The standards define the conditions under which the Bank would be judged successful and provide monitoring and maintenance requirements to uncover and correct deficiencies.

6.0 Monitoring and Maintenance Plan

The Sponsor agrees to perform all necessary work to monitor and maintain the TRH MB. To demonstrate compliance with the success criteria established in this BPDP and any regulatory permits the TRH MB will be monitored for a period of (five) 5 years or until all success criteria are met, whichever is later. The monitoring will begin at the end of the first full growing season following completion of grading and planting. Planting is estimated to begin in the spring of 2014, but could be delayed depending on the status of the stream restoration project with the IRT. If planting occurs as planned, the first monitoring event would occur in fall 2014. First monitoring data will not be measured less than 5 months after completion of initial planting. Vegetation data will be collected during late August – October of each year. The Sponsor shall provide annual monitoring reports to NCDENR-DWQ on the long term success of the Bank and to identify any problems requiring corrective action by December 31st of each year. The bank site will contain 14 vegetative monitoring plots, which will be monitored in general accordance with the CVS-EEP Protocol for Recording Vegetation (CVS-EEP, v4.2).

The Bank will be designed to be self-sustaining over time. However, some active management and maintenance is anticipated to ensure the long-term viability and sustainability of the Bank. This would most likely the repair of fencing and herbicide application. The Sponsor agrees to perform all necessary work to maintain the Bank consistent with the maintenance criteria established in this BPDP, the permits and the UMBI. The Sponsor shall continue with such monitoring and maintenance activities until Bank closure. Bank closure is defined as achieving all success criteria (listed above and detailed in the UMBI). Prior to Bank closure, an acceptable third-party non-profit land steward will be identified and will accept and maintain the conservation easement area. Deviation from the approved maintenance plan is subject to review and written approval by NCDENR-DWQ.

7.0 Tar-Pamlico Buffer Mitigation Potential

The Bank will provide 7.53 acres (328,006.8ft^2) of Tar-Pamlico Riparian Buffer Credits for buffer impacts within the Tar Pamlico River Basin. The exact amount of Tar-Pamlico riparian buffer mitigation will be included in the As-Built Report and on the corresponding Tar-Pamlico riparian buffer credit ledger. The restoration of Tar-Pamlico riparian buffer credits associated with the Bank will follow guidelines established by the UMBI and BPDP.

Table 3. Riparian Buffer Mitigation Credit Summary

TAR-PAMLICO RIPARIAN BUFFER RESTORATION CREDITS				
Conservation Area	**EXISTING SIZE (acres)**	**MITIGATION RATIO**	**Square Feet (Restored)**	**Acres (Restored)**
UT#2- R1 & UT#1 Channel	4.51	Restoration (1:1)	196,455.6	4.51
UT#2 – R2 Channel	3.02	Restoration (1:1)	131,551.2	3.02
TOTALS	**7.53**		**328,006.8**	**7.53**

8.0 Nutrient Mitigation Potential

The Bank will provide 9.26 acres (403,365.6ft^2) of Nutrient Offset Credits for development impacts within the 8-digit HUC 03020101 of the Tar-Pamlico River Basin. The restoration of nutrient offset associated with the Bank will follow guidelines established by the UMBI and BPDP.

Table 4. Nutrient Mitigation Credit Summary

NUTRIENT OFFSET RESTORATION CREDITS			
Conservation Area	**Nutrient Offset Restoration (Acres)**	**Nitrogen Credit (2,273.02 lbs/ac)**	**Phosphorus Credit (146.4 lbs/ac)**
UT#2-R1 & UT#1	**5.34**	**12,137.93**	**781.78**
UT#2-R2	**3.92**	**8,910.24**	**573.89**
TOTALS	**9.26**	**21,048.17**	**1,355.67**

9.0 References

Soil Survey of Person County, North Carolina (Sink, 1995)

Hydric Soils of North Carolina list (NRCS, 1995)

U.S.G.S. Geologic Map (Daniels *et. al*, 1999)

Threatened and Endangered Species, Online Database (USFWS, 2010)

North Carolina Natural Heritage Program, Online Database (NCNHP, 2010)

The Natural Communities of North Carolina; Third Approximation (Shafale and Wheatley, 1990)

U.S.G.S. 7.5 Minute Topographic Quadrangle, *Triple Springs*

Appendix A
Site maps

Figure 1: Vicinity Map

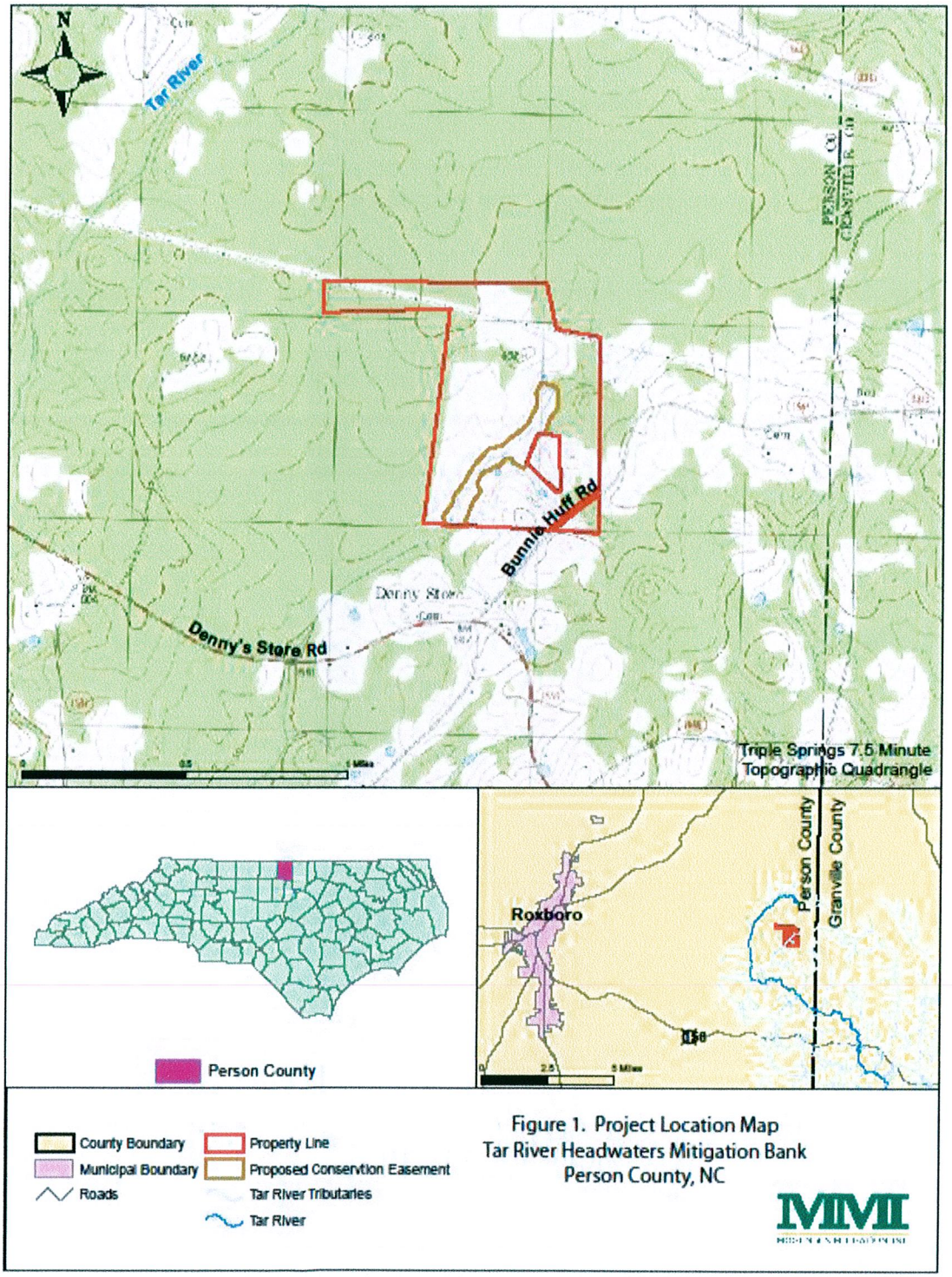


Figure 2.1: Overall Proposed Buffer & Nutrient Offset Restoration Areas With Overlapping Details of Stream Restoration Project Part 1

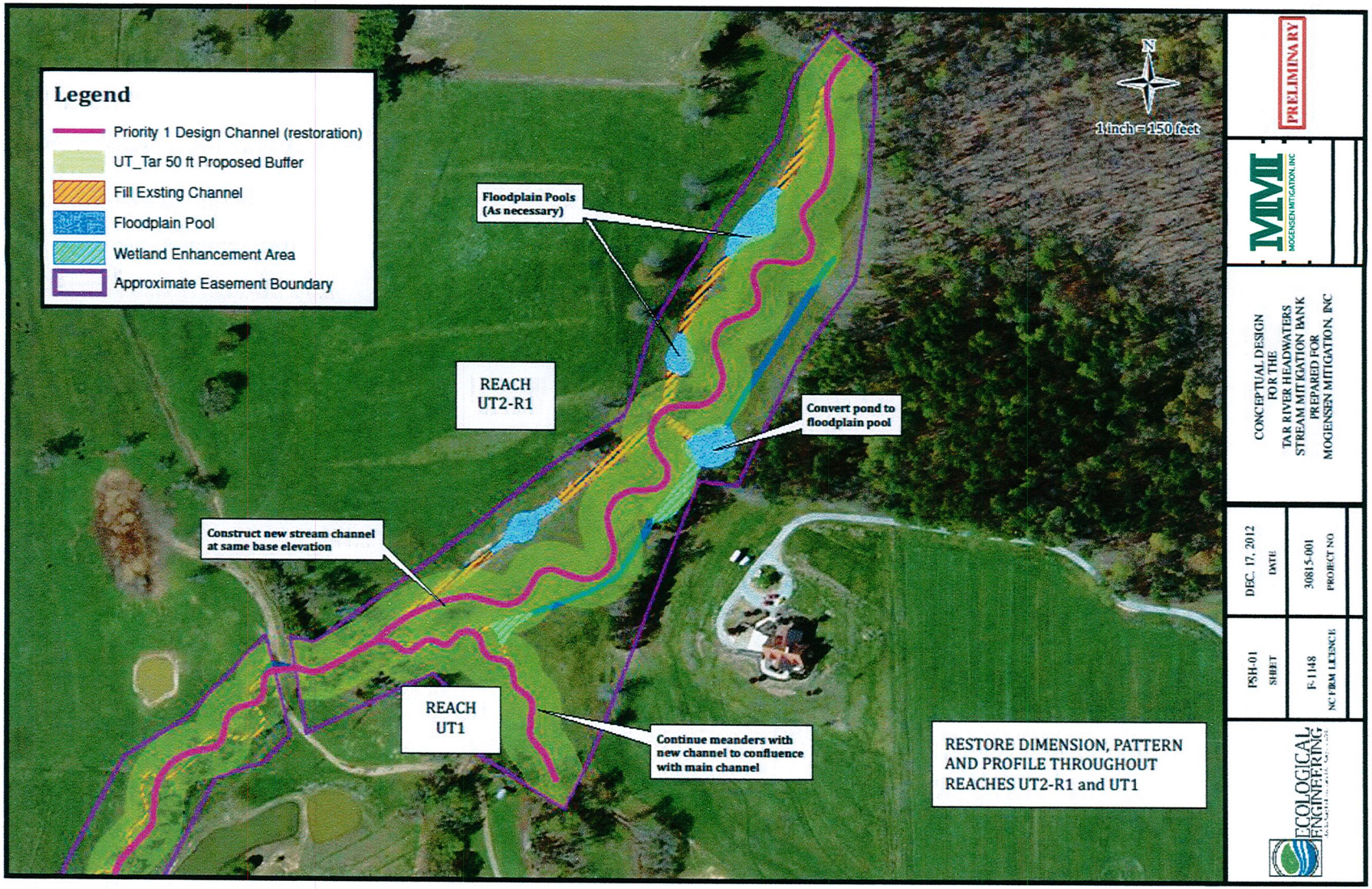
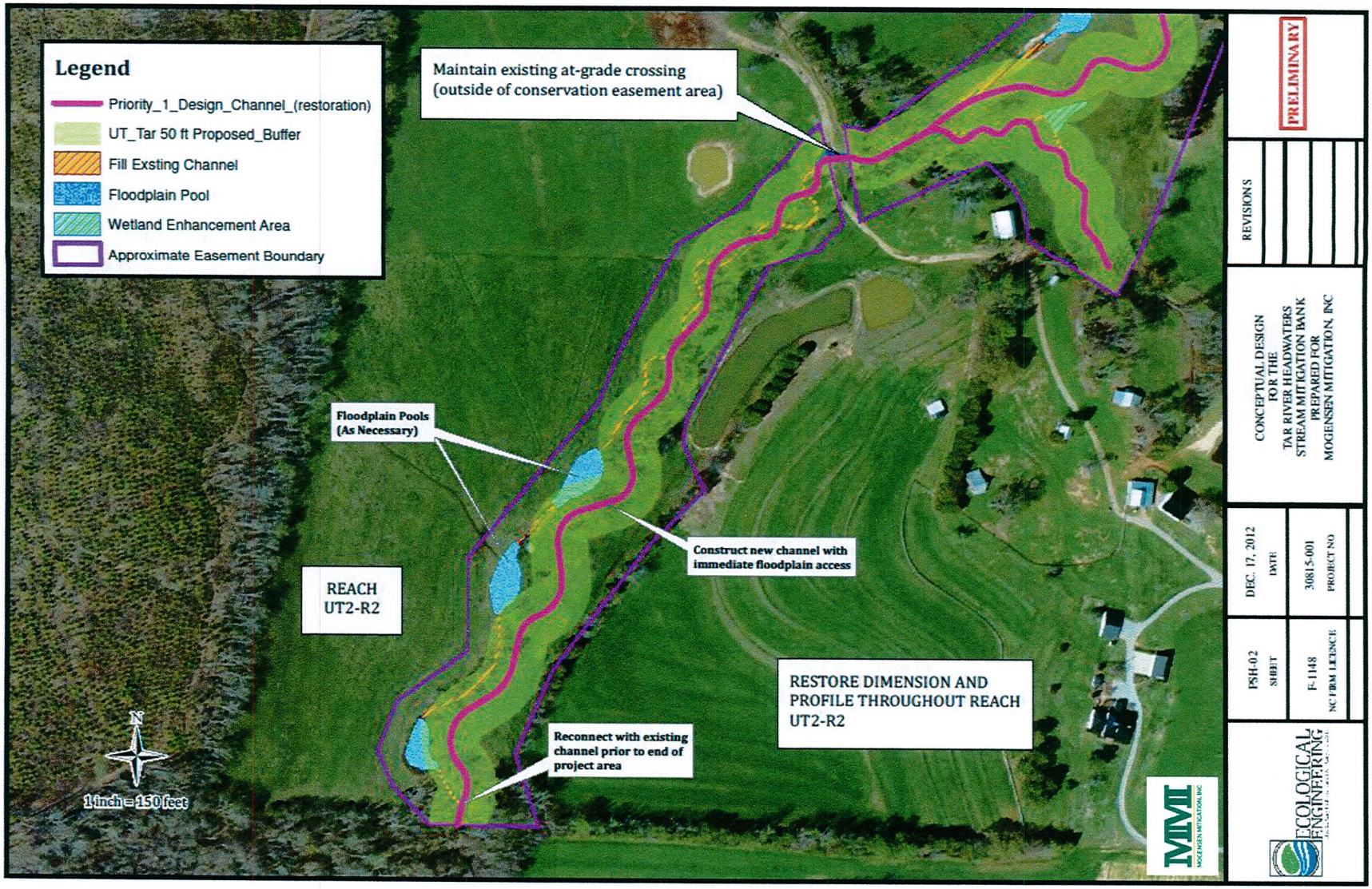


Figure 2.2: Overall Proposed Buffer & Nutrient Offset Restoration Areas With Overlapping Details of Stream Restoration Project Part 2



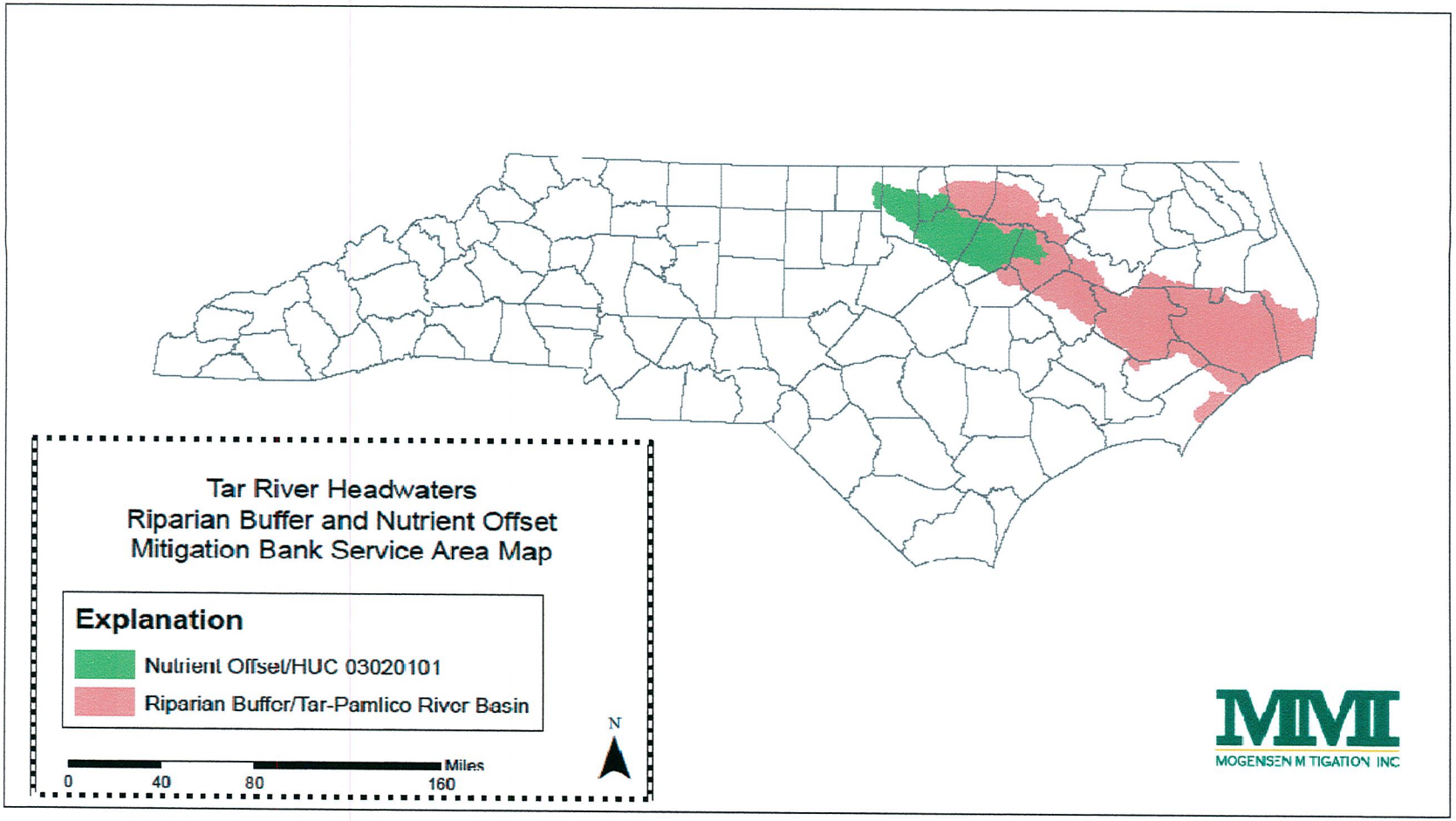
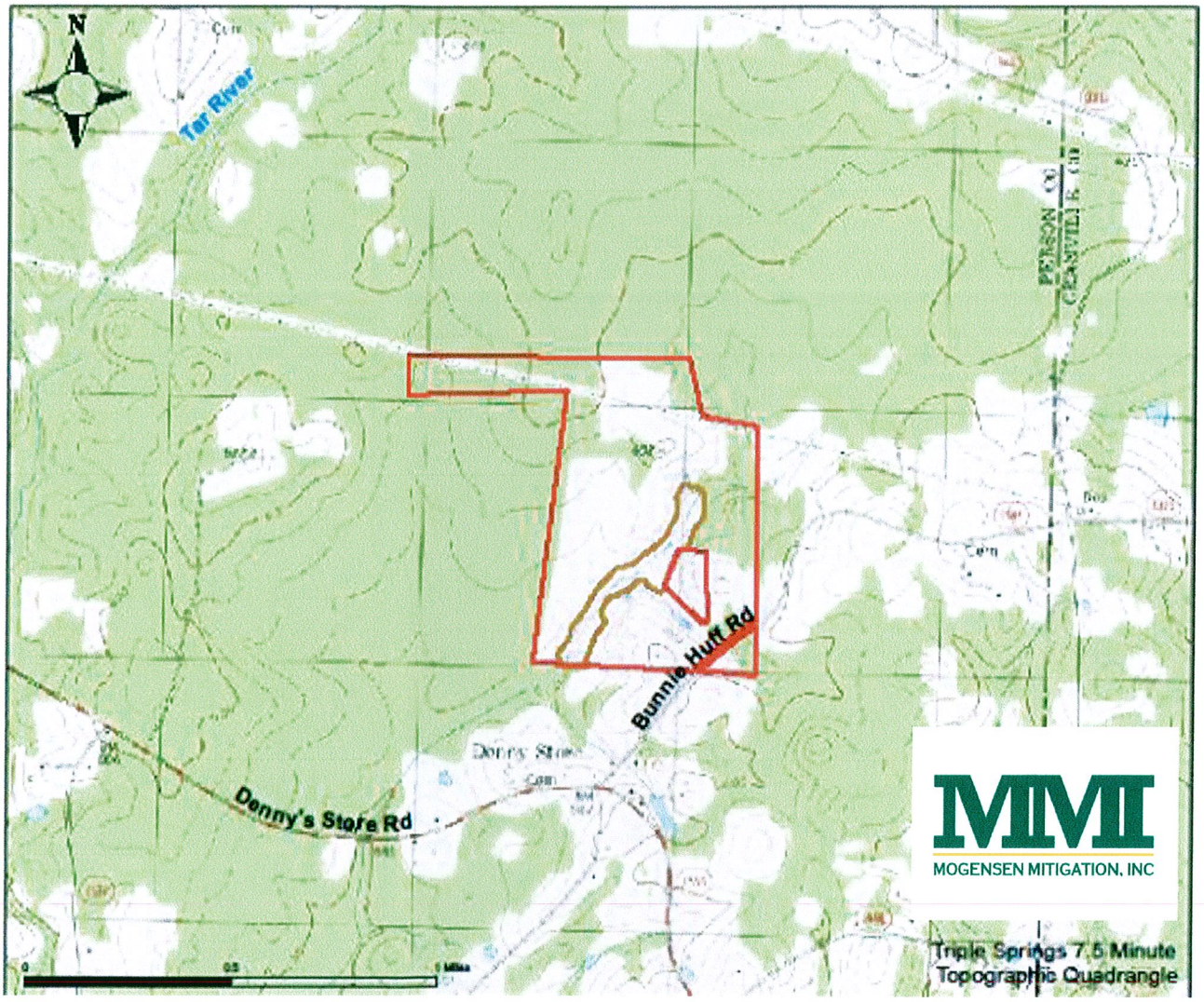


Figure 3: Geographic Service Area

Figure 4: USGS Site Map



APPENDIX B

Site Photographs

Picture 1: Located on UT-1 facing downstream toward the northeast.

Picture 2: Located adjacent to UT2-R1 facing northeast.

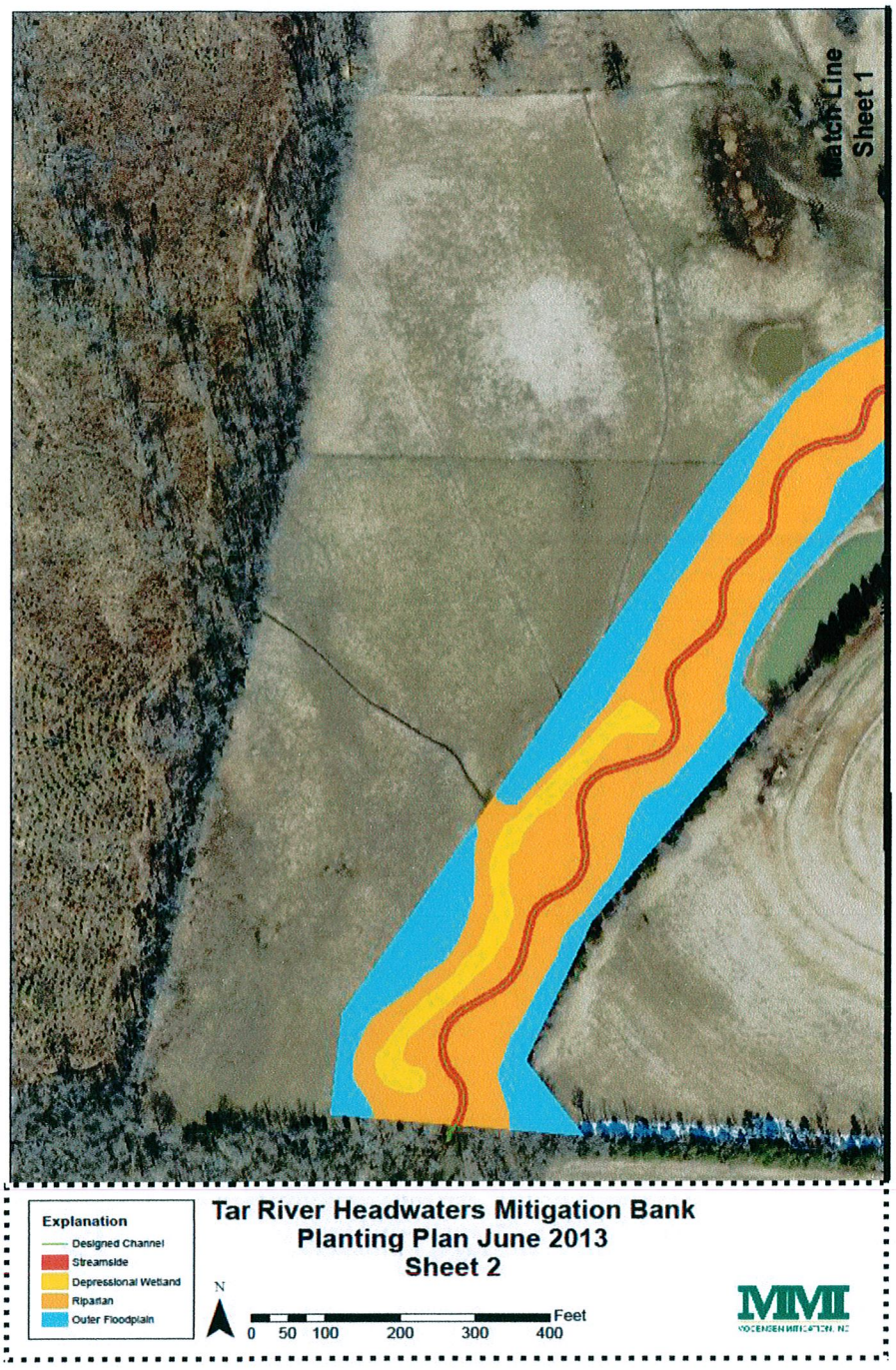
Picture 3: Located on UT2-R2 facing upstream toward the northeast.

Picture 4: Located on UT2-R1 facing downstream toward the southwest.

APPENDIX C

PLANTING PLAN

*This map is intended to depict where species groups will be planted based on the environmental conditions found at the site. There will be overlap between the planting zones found on this planting plan and the credit generation zones found on the credit generation maps found on pages 27-29.



*This map is intended to depict where species groups will be planted based on the environmental conditions found at the site. There will be overlap between the planting zones found on this planting plan and the credit generation zones found on the credit generation maps found on pages 27-29.

PLANTING ZONE PLANT LIST

Outer Floodplain (Can be Tar-Pamlico Riparian Buffer or Nutrient Offsets)

Outer Floodplain

Trees

Scientific Name	Common Name
Carpinus caroliniana	Ironwood
Carya ovata	Shagbark Hickory
Ilex opaca	American Holly
Liriodendron tulipifera	Tulip Poplar
Magnolia virginiana	Sweetbay Magnolia
Quercus alba	White Oak
Quercus falcata	Southern Red Oak
Quercus nigra	Water Oak
Quercus rubra	Northern Red Oak

*Use at least five (5) of the listed species.

Riparian Areas (Can be Tar-Pamlico Riparian Buffer or Nutrient Offsets)

Riparian

Trees

Scientific Name	Common Name
Ulmus americana	American Elm
Platanus occidentalis	American Sycamore
Quercus michauxii	Swamp Chestnut Oak
Quercus palustris	Pin Oak
Quercus phellos	Willow Oak
Taxodium distichum	Bald Cyprus
Nyssa sylvatica	Black Gum

*Use at least five (5) of the listed species.

Depressional Wetlands (Can be Tar-Pamlico Riparian Buffer or Nutrient Offsets)

Depressional Wetland

Trees

Scientific Name	Common Name

Fraxinus pennsylvanica	Green Ash
Quercus bicolor	Swamp White Oak
Quercus lyrata	Overcup Oak
Betula nigra	River Birch
Nyssa sylvatica	Water Tupelo

*Use at least three (3) of the listed species.

Streamside Areas

Streamside

Trees

Scientific Name Common Name

Salix nigra	Black Willow
Betula nigra	River Birch

*Use at least two (2) of the listed species.

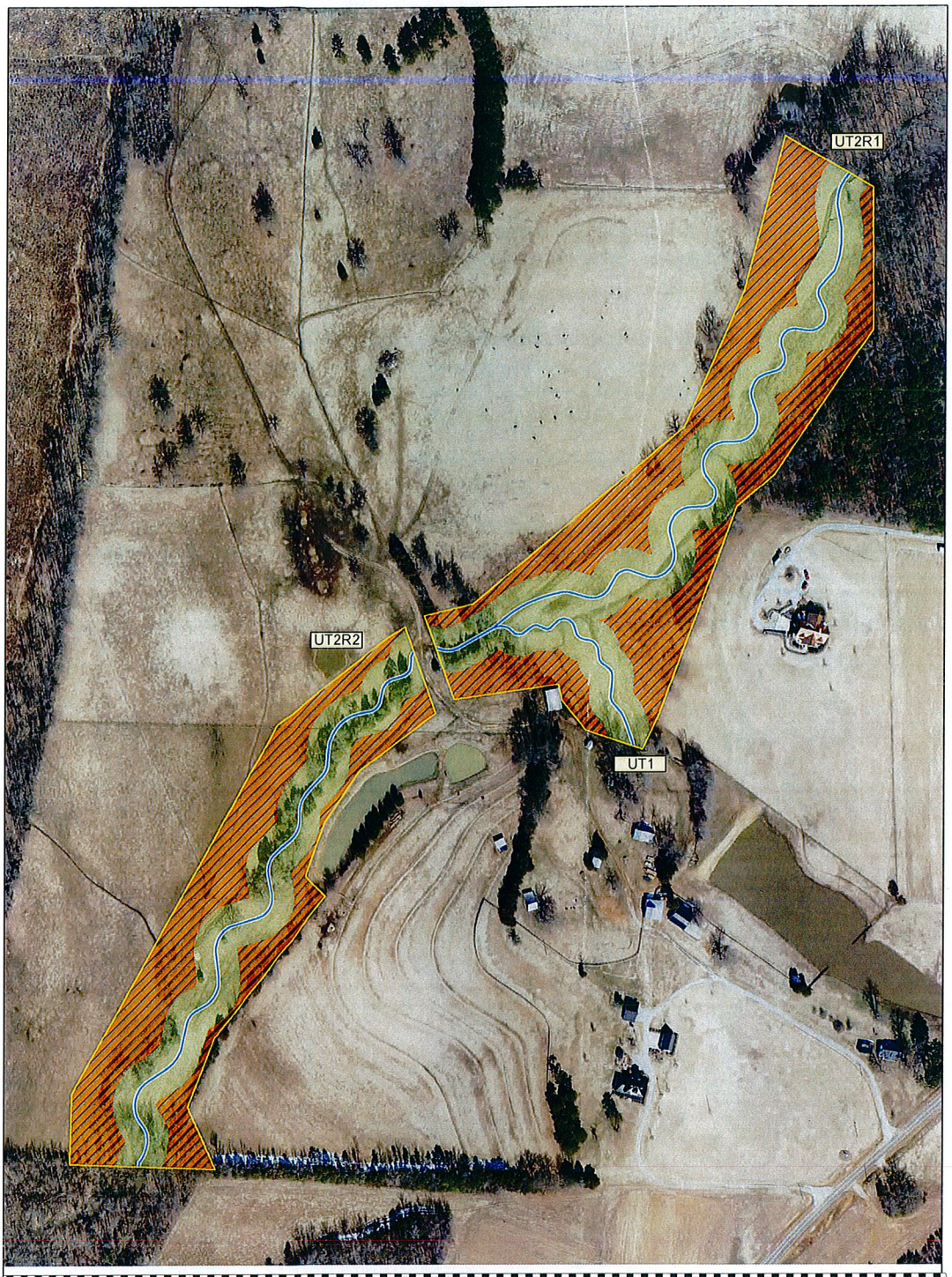
PLANTING NOTES

1. Any plant substitutions must be approved up front by DWR and the IRT prior to plantings.
2. All plants shall be in conformance with the "American Standard for Nursery Stock." Latest edition, published by the American Association of Nursery Men, Inc. with regard to sizing and description.
3. All plants shall be nursery grown and hardy under similar climatic conditions. All plants shall be typical of their species or variety and shall have a normal habit of growth. They shall be sound, healthy, vigorous, well branched and densely foliated in leaf. They shall be free of disease and insects. All plants will be inspected by owner or owner's representative prior to installation.
4. Container grown stock shall have been grown in container long enough for the root system to have developed sufficiently to hold the soil together firm and whole. Loose plants will not be accepted.
5. The contractor shall not make substitutions without prior approval of the designer or owner. If specified material is not available in type or size, the contractor shall request a change in writing.
6. All plant material shall be installed as per all plans, details and specifications contained here within.
7. All planting areas must have adequate topsoil for healthy tree and shrub growth.
8. All containers shall be removed prior to planting and disposed of properly. A minimum of one (1) gallon container stock shall be used unless otherwise approved by owner.
9. All plant material shall be guaranteed to be alive and in vigorous growing condition upon installation. Plant material found to be unhealthy, dying or dead will not be accepted. Any plant material showing 25% or more dieback shall be considered unhealthy or dying and shall be replaced.
10. All plants shall be watered in immediately after planting unless the planting hole is already sufficiently wet.
11. All trees will be randomly planted within each specified zone no closer than 10' spacing on centers. Small similar groups may be used.
12. All shrubs will be randomly planted within each specified zone no closer than 6' spacing on centers. Shrubs can be planted in similar small groups and can be no closer than 6' to any tree.
13. Permanent seed mix will be broadcast throughout each planting zone. This will consist of switchgrass (Panicum vigatum), deer tongue grass (Panicum clandestinum), Black-Eyed Susan (Rudbeckia hirta), tick seed sunflower (Bidens sp.), riverbank wild rye (Elymus riparius), or other acceptable native bottomland herbs and grasses, including but not limited to Carex sp., Scirpus Sp., Cyperus Sp., Eleocharis Sp., Juncus Sp., as well as an acceptable native wildflower mix such as Aster or Ranunculus.
14. Fencing will be required at least 5 feet to the outside of the Conservation Easement Boundary as noted on plans and will be installed prior to planting or immediately after, along the Conservation Easement Boundary.
15. All trees and shrubs shall be fertilized using osmocote slow release tabs or granules or acceptable substitute.

APPENDIX D

Credit Generation Maps

Credit Generation Map



Explanation

- Easement Boundary
- Future Designed Channel 3,821 lf.
- Nutrient Offsets 9.26 Acres, 21,048.17 lbs. (N), 1,355.67 lbs. (P)
- Tar-Pamlico Riparian Buffer 7.53 Acres, 328,006.8 ft2

0 250 500 1,000 Feet

N

MOGENSEN MITIGATION, INC

Credit Generation Map
Sheet 1

Explanation

- Easement Boundary
- Future Designed Channel 3,821 lf.
- Nutrient Offsets 5.34 Acres, 12,137.93 lbs. (N), 781.78 lbs. (P)
- Tar-Pamlico Riparian Buffer 4.51 Acres, 196,455.6 ft2

N

0 200 400 800 Feet

MOGENSEN MITIGATION, INC

Credit Generation Map
Sheet 2

Explanation

- Easement Boundary
- Future Designed Channel 3,821 lf.
- Nutrient Offsets 3.92 Acres, 8,910.24 lbs. (N), 573.89 lbs. (P)
- Tar-Pamlico Riparian Buffer 3.02 Acres, 131,551.2 ft2

N

0 150 300 600 Feet

MOGENSEN MITIGATION, INC

APPENDIX E

Construction Notes

SEQUENCE OF CONSTRUCTION

1. Several weeks prior to planting, site will be sprayed with Rodeo^{PX} or an acceptable substitute to kill undesirable grass and weeds.
2. Several weeks prior to planting, make all utility verification calls to identify underground utilities.
3. Prepare/improve construction access road from Bunnie Huff Road as needed.
4. Install any erosion control devices and stabilized construction entrance.
5. Rip planting areas with chisel plow or long shank ripper. Furrows to follow contour of land. This should be done during dry times. Remove all rocks, stumps, and other debris. Rake out planting areas.
6. Mark out all planting zones with bright colored flagging and stake out fence location (if surveyor has not done so already).
7. Plant all trees and shrubs in zones shown in this plan. Fertilize with osmocote slow-release fertilizer or acceptable substitute.
8. Seed all planting zones with seed mix specified in this plan. Seed may be broadcast or hydroseeded. Seed shall be "raked in" ¼".
9. Work must be coordinated with stream channel restoration if done concurrently. If this plan is implemented before stream channel restoration activities, **DO NOT** plant in areas of existing or new channel alignment. Only plant in zones labeled Riparian and Buffer.
10. Planting should be done in safe conditions (i.e. do not plant during thunderstorms or high winds).
11. Install secured tree mats (see detail) with four (4) sod staples during or immediately after tree and shrub plantings.
12. Install all fencing per fencing details.

GENERAL NOTES

1. Survey information and Topographic Base Mapping prepared by Alois Callemyn, PLS.
2. During planting and fencing, the contractor will adhere to all conditions set forth in the following documents:
    a. Tar River Headwaters Riparian Buffer and Nutrient Offset Umbrella Mitigation Banking Instrument (Signed by DWR)
    b. Tar River Headwaters Bank Parcel Development Package (Approved by DWR)
    c. Tar River Headwaters Final Stream Mitigation Plan (Approved by IRT)
    d. All permits provided by owner and/or engineer
3. The contractor is required to submit a detailed planting and fencing schedule to owner upon award of contract.
4. The contractor must attend a pre-construction meeting for review and approval.
5. The contractor is required to make all calls for location and stake out of utilities prior to construction. Any damage to utilities will be repaired immediately at contractor's expense.
6. The construction access road will be restored to pre-construction conditions or better.
7. Any impacted areas outside the Limits of Disturbance shall be restored to existing conditions at contractor's expense.
8. Contractor shall prepare the planting areas, clear all debris and large rocks prior to planting and fencing the Conservation Easement Boundary.
9. Limit access to planting sites by mechanical equipment to reduce rutting. Any ruts or tire tracks must be smoothed out before the end of construction and planting. Use perimeter access corridors whenever possible.

APPENDIX F

DWQ Buffer Determination Letter

North Carolina Department of Environment and Natural Resources
Division of Water Quality

Pat McCrory
Governor

Thomas A. Reeder
Acting Director

John E. Skvarla, III
Secretary

June 28, 2013

Rich Mogensen, PWS
Mogensen Mitigation, Inc.
P. O. Box 690429
Charlotte, NC 28227

Subject: Surface Water Determination Letter
NBRRO13-141
Person County

Determination Type	
Buffer Call	Isolated or EP Call
☐ Neuse (15A NCAC 2B .0233)	☒ Ephemeral/Intermittent/Perennial Determination
☒ Tar-Pamlico (15A NCAC 2B .0259)	☐ Isolated Wetland Determination
☐ Jordan (15A NCAC 2B .0267)	

Project Name: Tar River Headwaters Mitigation Bank

Location/Directions: Subject property is a proposed mitigation bank located west of Bunnie Huff Rd north of Denny Store Rd in Person County

Subject Stream: UT to Tar River

Determination Date: June 11, 2013 **Staff: Martin Richmond**

Feature	E/I/P*	Not Subject	Subject	Start@	Stop@	Soil Survey	USGS Topo
A	P		X	Throughout		X	X
B	P		X	Throughout		X	X
C	I		X	DWQ Flag		X	

*E/I/P = Ephemeral/Intermittent/Perennial

Explanation: The feature(s) listed above has or have been located on the Soil Survey of Person County, North Carolina or the most recent copy of the USGS Topographic map at a 1:24,000 scale. Each feature that is checked "Not Subject" has been determined not to be a stream or is not present on the property. Features that are checked "Subject" have been located on the property and possess characteristics that qualify it to be a stream. There may

North Carolina Division of Water Quality
Internet: www.ncwaterquality.org
Raleigh Regional Office
1628 Mail Service Center
Surface Water Protection
Raleigh, NC 27699-1628
Phone (919) 791-4200
FAX (919) 571-4718
Customer Service
1-877-623-6748

other streams located on your property that do not show up on the maps referenced above but, still may be considered jurisdictional according to the US Army Corps of Engineers and/or to the Division of Water Quality

This on-site determination shall expire five (5) years from the date of this letter. Landowners or affected parties that dispute a determination made by the DWQ or Delegated Local Authority may request a determination by the Director. An appeal request must be made within sixty (60) days of date of this letter or from the date the affected party (including downstream and/or adjacent owners) is notified of this letter. A request for a determination by the Director shall be referred to the Director in writing c/o Karen Higgins, DWQ WetBSCaPe Unit, 1650 Mail Service Center, Raleigh, NC 27699

This determination is final and binding unless, as detailed above, you ask for a hearing or appeal within sixty (60) days

The owner/future owners should notify the Division of Water Quality (including any other Local, State, and Federal Agencies) of this decision concerning any future correspondences regarding the subject property (stated above). This project may require a Section 404/401 Permit for the proposed activity. Any inquiries should be directed to the Division of Water Quality (Central Office) at (919)-807-6300, and the US Army Corp of Engineers (Raleigh Regulatory Field Office) at (919)-554-4884

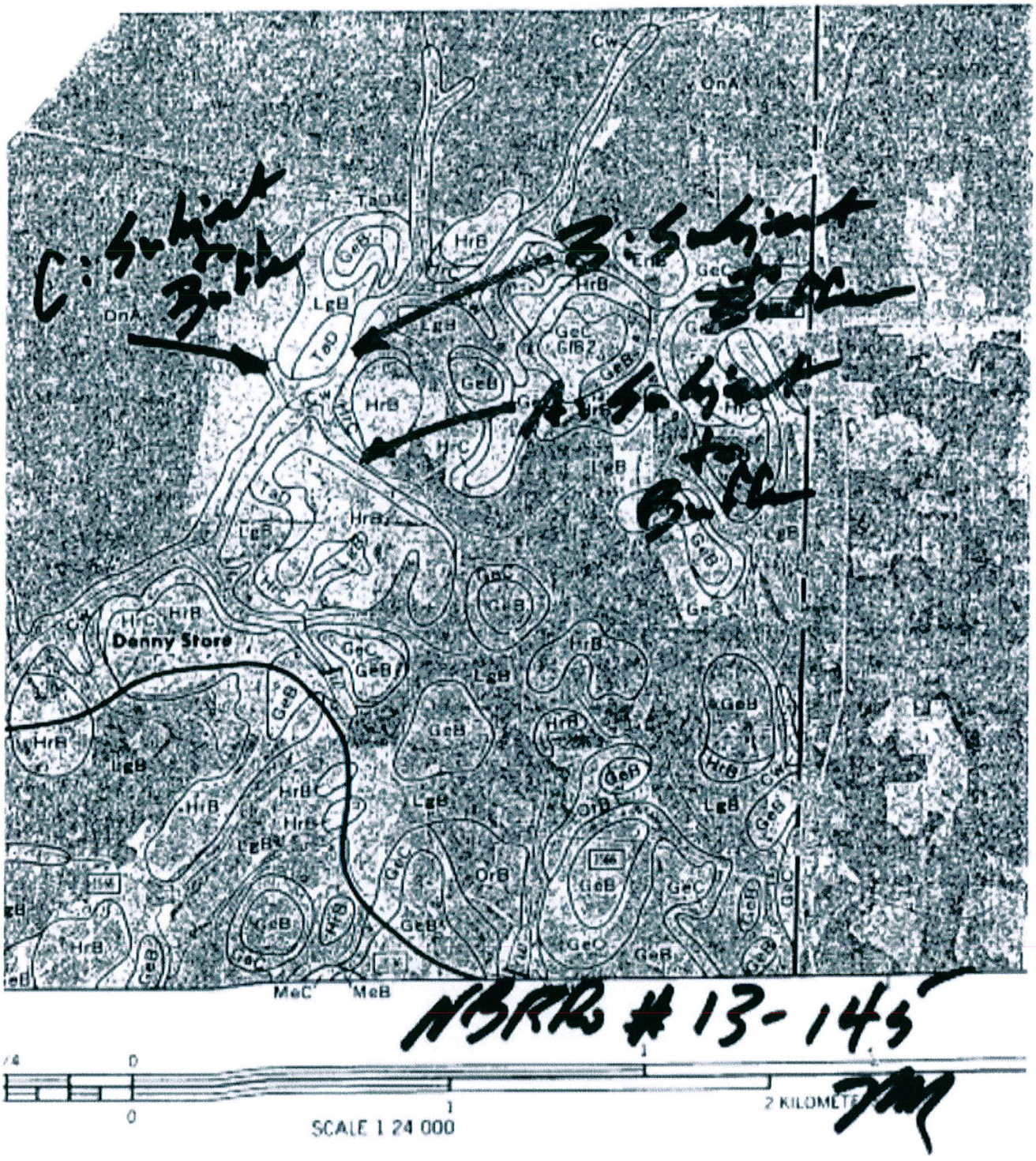
If you have questions regarding this determination, please feel free to contact Martin Richmond at (919) 791-4200

Respectfully,

Danny Smith
Regional Supervisor

cc RRO/SWP File Copy

Denny Store
PERSON CO
GRANVILLE C



PERSON COUNTY, NORTH CAROLINA NO 8